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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,374	07/01/2005	Tatsuya Hosotani	36856.1353	8396

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EXAMINER

LAXTON, GARY L

ART UNIT	PAPER NUMBER
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2838

NOTIFICATION DATE	DELIVERY MODE
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12/09/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/541,374	Applicant(s) HOSOTANI ET AL.	
	Examiner Gary L. Laxton	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/21/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/10/2009 have been fully considered but they are not persuasive. The applicant argues that Hosotani et al. does not determine an ON period of each switching element. The examiner respectfully disagrees. Hosotani et al. expressly state "[i]n a method shown by FIG. 4A, the switching control circuits control the ON-time of the switching elements Q1 and Q2..." (col. 14 lines 3-20). Furthermore, figure 2 shows that each control circuit has different feedback windings and different parameter inputs. For example, control circuit 11 has an output signal fed back to it unlike control circuit 12. See also figure 1 that is very similar and better illustrates this. Therefore, since Hosotani et al. clearly illustrate this concept and expressly state the concept, the examiner respectfully maintains the rejections.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 11-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hosotani et al. (US 6,469,913 – supplied by applicant).

Claim 11; Hosotani et al. disclose a switching power-supply unit (figure 2) comprising: an inductor (L) or a transformer (T); a plurality of switching elements (Q1, Q2) switching a current flowing in the inductor or the transformer and converting power (V_{in} to V_o) by turning on and off the switching elements (Q1, Q2); and a switching control circuit (11, 12, 14 etc.) that turns on the next of the plurality of switching elements in accordance with a change of a voltage or a current generated due to turning off of one of the switching elements in an ON-state (col. 11 lines 60-67; col. 12 lines 1-5), that sequentially turns on and off the switching elements in association with each other, that repeats a series of on-off operations of the switching elements periodically, that determines an ON-period of each of the switching elements in accordance with a condition independently provided for each of the switching elements, and that controls the ON-period of each of the switching elements (col. 12 lines 7-50).

Claim 12; wherein a dead time in which two consecutive ones of the plurality of switching elements are turned off is provided between ON-periods of the two switching elements, and wherein the dead time is arranged in accordance with a delay time from turning off of the switching element in the ON-state and turning on of the next switching element (figure 3: e.g. t_2-t_3/t_4-t_5).

Claim 13; wherein the dead time is set such that the switching element is turned on when a voltage across the switching element becomes zero or is reduced to near zero (col. 10 lines 20-39).

Claim 14; wherein the switching control circuit turns on the next of the plurality of switching elements using a voltage at the inductor or the transformer generated due to turning off

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of the one of the plurality of switching element in the ON-state (col. 11 lines 60-67; col. 12 lines 1-5; col. 12 lines 7-50).

Claim 15; wherein the switching control circuit detects an output voltage to a load to determine the ON-period in accordance with the output voltage (figure 2; e.g. 14).

Claims 16-20; wherein the switching control circuit detects a change or a polarity of a voltage generated at the inductor or the transformer to determine the ON-period (col. 10 lines 20-39; col. 11 lines 60-67; col. 12 lines 1-5; col. 12 lines 7-50).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Lewis can be reached on (571)272-1838. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gary L. Laxton/
Primary Examiner
Art Unit 2838

12/6/2009